

14/7/1

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Ammonium fluoride prodn. - by continuous neutralisation of hydrofluoric acid with ammonia gas in two-stage system

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Patent Family:

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SU 1326552	A	19870730	SU 3809191	A	19840828	198810 B

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Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
SU 1326552	A	2		

Abstract (Basic): SU 1326552 A

NH<sub>4</sub>F used in chem industry is made by neutralising HF soln. with NH<sub>3</sub> at 50-70 deg. C. Better yields are secured by using 2-stage mfg. Stage 1 is conducted with a 3-5% deficiency of the stoichiometric amt. of NH<sub>3</sub>. In stage 2, the remaining NH<sub>3</sub> is added and the temp. raised to 95-105 deg. C.

21.6% HF is run into a graphite-plastic reactor, while NH<sub>3</sub> gas is pumped in simultaneously at 4.35l/min. The intense heat of reaction is removed by cooling water, so that the temp. does exceed 50 deg. C. In a second polymeric compartment NH<sub>3</sub> is supplied at 0.135 l/min. while the cooling water ensures that the exit temp. is below 95 deg. C. Prod. analysis is conducted at intervals and a typical analysis shows (wt. %): NH<sub>4</sub>F 39.85, NH<sub>3</sub> 0.45, Fe, Cu, Ni Mn, Pb only minute traces. The yield is 99.8%.

ADVANTAGE - The patented process gives NH<sub>4</sub>F in 99.9% yield; metallic impurities are less than 1.10 power minus 5. The use of a

2-stage process minimises plant corrosion problems and allows continuous operation. Bul.28/30.7.87.

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Derwent Class: E35

International Patent Class (Additional): C01C-001/16

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